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CYNTHIA E. RICHMAN (D.C. Bar No.
492089; *pro hac vice*)
crichman@gibsondunn.com
GIBSON, DUNN & CRUTCHER LLP
1050 Connecticut Avenue, N.W.
Washington, DC 20036-5306
Telephone: 202.955.8500
Facsimile: 202.467.0539

NICOLA T. HANNA (SBN 130694)
nhanna@gibsondunn.com
DANIEL G. SWANSON (SBN 116556)
dswanson@gibsondunn.com
JASON C. LO (SBN 219030)
jlo@gibsondunn.com
JENNIFER J. RHO (SBN 254312)
jrho@gibsondunn.com
GIBSON, DUNN & CRUTCHER LLP
333 South Grand Avenue
Los Angeles, CA 90071
Telephone: 213.229.7000
Facsimile: 213.229.7520

CAELI A. HIGNEY (SBN 268644)
chigney@gibsondunn.com
JULIAN W. KLEINBRODT (SBN 302085)
jkleinbrodt@gibsondunn.com
GIBSON, DUNN & CRUTCHER LLP
555 Mission Street, Suite 3000
San Francisco, CA 94105-0921
Telephone: (415) 393-8200
Facsimile: (415) 393-8306

Attorneys for Defendant Apple Inc.

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA**

AliveCor, Inc.,

Plaintiff,

v.

Apple Inc.,

Defendant.

CASE NO. 4:21-CV-03958-JSW

**DEFENDANT APPLE INC.'S *DAUBERT*
MOTION TO EXCLUDE THE
TESTIMONY OF DR. ROOZBEH JAFARI**

The Honorable Jeffrey S. White

Date: October 6, 2023

Time: 9:00 am

Place: Courtroom 5, 2nd Floor

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STATEMENT OF ISSUES

1
2 1. Whether the Court should exclude the opinion in Dr. Roozbeh Jafari’s opening report (Ex.
3 7) that “the changes Apple implemented in beta versions of watchOS 5.0 and subsequently in the
4 publicly-released watchOS 5.0 itself degraded SmartRhythm’s functionality such that the feature was
5 no longer able to accurately predict potential AFib events with nearly the same degree of accuracy it
6 was able to achieve in watchOS 4.3.2 and in prior versions of watchOS” under *Daubert v. Merrell Dow*
7 *Pharmaceuticals, Inc.*, 509 U.S. 579 (1993) (“*Daubert*”), and related authorities.
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FILED UNDER SEAL**I. INTRODUCTION**

AliveCor’s expert, Dr. Roozbeh Jafari, purports to conclude, and intends to tell the jury, that watchOS 5 significantly reduced the ability of AliveCor’s SmartRhythm 2.0 feature to accurately detect instances of atrial fibrillation compared to the same software running on watchOS 4.3.2.¹ Ex. 7 (Jafari Rpt.) ¶ 69. To properly reach this conclusion through a scientifically sound methodology, Dr. Jafari would have first needed to demonstrate that the purported baseline standard—SmartRhythm on watchOS 4—accurately detects atrial fibrillation either in the general population or in the AliveCor userbase. Because to show a new element *broke* something, one must show that the original something was *working to begin with*. And having done that, Dr. Jafari would have needed to compare the purported baseline standard (SmartRhythm on watchOS 4) with SmartRhythm on watchOS 5 using a large and representative portion of the AliveCor userbase or general population to demonstrate a statistically significant difference between SmartRhythm 2.0’s performance operating on watchOS 5 and watchOS 4. After all, just because the software does not work for one particular individual experiencing a specific health event, it does not mean that the software does not generally work for the overall population.

Dr. Jafari did not do any of this. Instead, Dr. Jafari’s bases his opinion primarily on one SmartRhythm “experiment” that [REDACTED] and that uses just two samples of data to compare the functionality of SmartRhythm 2.0 on watchOS 5 and watchOS 4. Dr. Jafari does not opine that these two samples are a sufficient basis to demonstrate performance in the overall population, nor does he say that these two samples are somehow representative. To the contrary, Dr. Jafari acknowledges that these two samples were [REDACTED] [REDACTED] On this shallow, skewed, and questionable basis, Dr. Jafari concludes, broadly: “It is my opinion that the changes Apple implemented in beta versions of watchOS 5.0 and subsequently in the publicly-released watchOS 5.0 itself degraded SmartRhythm’s functionality such that the feature was no longer able to

¹ Although Dr. Jafari purports to render opinions only as to one specific variation of watchOS 4 (watchOS 4.3.2), Apple will refer to that variation as “watchOS 4” as a shorthand.

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1 accurately predict potential AFib events with nearly the same degree of accuracy it was able to achieve
2 in watchOS 4.3.2 and in prior versions of watchOS.” Ex. 7 (Jafari Rpt.) ¶ 69.²

3 This opinion is not backed by reliable scientific methodology, and thus should be excluded in
4 its entirety. To begin with, the experiment involved running only two data files containing PPG data
5 through AliveCor’s SmartRhythm feature in a Kardia App running on two Apple Watches, one
6 operating watchOS 4 and the other operating watchOS 5. Each of the two data files contains about 30
7 minutes of PPG data from *two* specific individuals stored in the MIMIC database. The MIMIC database
8 is a public data repository of prior ECG and PPG recordings from over forty thousand patients, all of
9 whom were in intensive care when the information was recorded. The selection from the MIMIC
10 database already raises red flags about whether those intensive care data samples can ever be
11 representative of the general userbase. Dr. Jafari never says that they are representative, nor did he
12 conduct any analysis or point to any responsive literature to confirm or demonstrate that the two
13 recordings are a sufficient sample size.

14 Even if it were appropriate to use data samples from the MIMIC database, Dr. Jafari did not
15 choose the specific two data files to use for the experiment, nor were those files randomly chosen. To
16 the contrary, Dr. Jafari concedes that the two recordings [REDACTED]
17 [REDACTED] and among
18 those, identified these two as [REDACTED] outliers or “[REDACTED] cases that best demonstrated the
19 supposed degradation of SmartRhythm on watchOS 5. Ex. 52 (Jafari Dep. I) 94:17–95:11.

20 It gets worse. Because despite testing only two cherry-picked data samples, the SmartRhythm
21 experiment on which Dr. Jafari relies returned mixed results. For one of the two recordings (or *half* of
22 the tested samples), SmartRhythm actually performed “better” on watchOS 5 by triggering an alert
23 over six minutes faster than SmartRhythm operating on watchOS 4 (while the user was actually
24 experiencing atrial fibrillation, according to separately-collected ECG data also available on the
25 MIMIC database). In his report, Dr. Jafari does not acknowledge or explain this mixed result. Instead,
26 without any sign of contemplation or perturbation, he blissfully jumps to the conclusion that the
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2 All citations to exhibits refer to exhibits to the concurrently filed Declaration of Jason Lo.

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1 experiments demonstrated that “the foreclosure of access to heart rates [generated in watchOS 4] in
2 workout mode likely severely reduced SmartRhythm’s functionality. . . .” Ex. 7 (Jafari Rpt.) ¶ 89.

3 The methodological flaws – and ambiguous results – of the SmartRhythm experiment do not
4 provide a scientifically sound basis for Dr. Jafari’s opinion.

5 The only other material Dr. Jafari relies on to support his opinion are documents and testimony
6 from AliveCor personnel—but Dr. Jafari does not conduct any independent analysis of those sources
7 (scientifically reliable or otherwise). Indeed, most of the documents he identifies provide little to no
8 context by which Dr. Jafari could even assess or evaluate AliveCor’s methodology or the conclusions
9 contained in those materials. Simple recitation of the statements in these documents does not constitute
10 scientific methodology for the purpose of providing his expert opinion about the impact of watchOS 5
11 on SmartRhythm’s performance.

12 Dr. Jafari’s opinion is therefore not supported by or derived from any reliable methodology, is
13 inadmissible, and must be excluded.

II. BACKGROUND

15 Dr. Jafari relies on two sets of material as the basis for his opinion that watchOS 5 degraded the
16 functionality of SmartRhythm 2.0: documents and testimony from AliveCor, primarily from an
17 engineer named Alex Valys, and a SmartRhythm experiment AliveCor conducted [REDACTED]

18 [REDACTED]
19 [REDACTED]

A. Alex Valys Memorandum Summarizing 2018 Tests

21 Dr. Jafari relies on a memorandum prepared in 2018 by AliveCor employee Alex Valys. [REDACTED]
22 [REDACTED]
23 [REDACTED] See
24 Ex. 7 (Jafari Rpt.) ¶ 74. [REDACTED]
25 [REDACTED]

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1 [REDACTED] See Ex. 51 (AliveNDCal_00022918) (“2018 Memorandum”) at -918. [REDACTED]
 2 [REDACTED] See *id.*; Ex. 7 (Jafari Rpt.) ¶ 74.
 3 [REDACTED]
 4 [REDACTED]
 5 [REDACTED]
 6 [REDACTED]
 7 [REDACTED] Ex.
 8 52 (Jafari Dep. I) 94:9–96:5. [REDACTED]
 9 [REDACTED]
 10 [REDACTED] *Id.* 96:13–97:15.

B. 2023 Experiment

12 To prepare his expert report, Dr. Jafari relied on an experiment in which AliveCor engineers
 13 recreated Mr. Valys’s tests from 2018. Although Dr. Jafari repeatedly insists that the experiment was
 14 conducted at “his direction” and according to his [REDACTED] the instructions Dr. Jafari actually
 15 provided were merely Dr. Jafari’s efforts to duplicate the work that Mr. Valys performed in 2018. Ex.
 16 7 (Jafari Rpt.) ¶ 82; Ex. 52 (Jafari Dep. I) 31:10–14.

17 But there is one notable difference between the 2023 experiment and Mr. Valys’s 2018
 18 experiment: [REDACTED]
 19 [REDACTED] Instead, he asked AliveCor employees to re-test
 20 [REDACTED] and compare how
 21 the version of SmartRhythm 2.0 publicly released in October 2018 performed on an Apple Watch
 22 running watchOS 4, and an Apple Watch running watchOS 5, for those two samples. Ex. 7 (Jafari
 23 Rpt.) ¶ 82.

26
 27 ³ [REDACTED]
 28 [REDACTED] The purpose of this is to attempt to simulate the
 information the Watch would typically collect from a person’s wrist through the PPG sensor, without
 using a live human subject.

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Despite this pre-screening, these tests produced (at best) ambiguous results. For the first data sample AliveCor tested, SmartRhythm 2.0 performed *better* on watchOS 5 than on watchOS 4, issuing an alert on watchOS 5 over 6 minutes faster than on watchOS 4. Ex. 7 (Jafari Rpt.) ¶ 84. More stunning than this result is that Dr. Jafari’s report never directly acknowledges this contrapositive outcome, much less attempts to explain it away. *Id.* ¶ 85. For the second sample, SmartRhythm 2.0 issued an alert when running on watchOS 4, but did not issue an alert on watchOS 5. *Id.* ¶ 86. Notably, however, this second sample appears to be unusual insofar as the underlying patient had a rare heart condition called atrial flutter in addition to atrial fibrillation.⁴ See Ex. 2 (Stultz Rebuttal) ¶ 121. Because of this rare baseline arrhythmia, SmartRhythm’s performance with regard to this data sample is (even more) likely not representative of how it would perform on a more typical individual in the AliveCor userbase or even the general population. *Id.* ¶ 124.

C. Other Documents & Testimony From AliveCor

Finally, Dr. Jafari relies on several other documents and pieces of testimony indicating that AliveCor personnel observed changes to SmartRhythm’s behavior following the release of watchOS 5. Dr. Jafari does not conduct any independent analysis to corroborate or validate the reliability of the opinions and conclusions he cites from these sources.

III. LEGAL STANDARD

Under *Daubert* and Federal Rule of Evidence 702, “the district court judge must ensure that all admitted expert testimony is both relevant and reliable.” *Grodzitsky v. Am. Honda Motor Co.*, 957 F.3d 979, 984 (9th Cir. 2020); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147 (1999). The “proponent of the expert” carries “the burden of proving admissibility” of the expert testimony. *Lust By & Through Lust v. Merrell Dow Pharm., Inc.*, 89 F.3d 594, 598 (9th Cir. 1996). Relevancy or “fit” requires that an expert’s testimony be “relevant to the task at hand.” *Daubert v. Merrell Dow Pharm., Inc.*, 43 F.3d 1311, 1315 (9th Cir. 1995) (*Daubert II*). To be sufficiently reliable, there must be “good grounds” for the expert’s testimony—it cannot be based on “subjective belief or unsupported

⁴ In 2005, an estimated .06% of the United States population had concurrent atrial fibrillation and atrial flutter while around 1.03% had atrial fibrillation alone. See “Increasing Prevalence of Atrial Fibrillation and Flutter in the United States,” *American Journal of Cardiology* (Dec. 1, 2009), available at [https://www.ajconline.org/article/S0002-9149\(09\)01388-5/fulltext](https://www.ajconline.org/article/S0002-9149(09)01388-5/fulltext).

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speculation,” *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 590 (1993) (*Daubert I*), and it must be “based on sufficient facts or data.” Fed. R. Evid. 702.

IV. ARGUMENT**A. Dr. Jafari’s Opinion Relies on an Experiment Using Insufficient & Cherry-Picked Data**

The SmartRhythm experiment on which Dr. Jafari relies was methodologically flawed, biased, and not scientifically sound. The experiment used only two cherry-picked data samples that AliveCor personnel pre-tested and filtered in order to exclude samples that would produce results less favorable to AliveCor. Dr. Jafari himself is unwilling and unable to say that the data samples are representative of the general population or of AliveCor’s userbase. Ex. 53 (Jafari Dep. II) 84:20–88:16. To the contrary, they are demonstrably non-representative according to both Dr. Jafari as well as Apple’s expert, Dr. Collin Stultz. Dr. Jafari’s reliance on this scant, biased data is not scientifically sound and merits the exclusion of his opinion under *Daubert*.

1. Inadequate Sample Size

In the 2023 SmartRhythm experiment, AliveCor engineers tested two data samples to compare how SmartRhythm functioned on watchOS 4 and watchOS 5. In the first of these two tests, SmartRhythm performed better on watchOS 5 than watchOS 4, correctly generating an alert over six minutes *faster* on watchOS 5 (at a time when the underlying ECG data indicates the patient was actually experiencing atrial fibrillation). In the second test SmartRhythm failed to alert on watchOS 5, but alerted on watchOS 4. Dr. Jafari relies on these two mixed results to broadly opine that watchOS 5 meaningfully degraded the functionality of SmartRhythm such that SmartRhythm 2.0 could no longer identify instances of atrial fibrillation with nearly the same accuracy as compared to prior watchOS versions.

As a threshold issue, to show that Apple’s watchOS 5 update “was directly responsible for the disablement of SmartRhythm” one must show that SmartRhythm 2.0 previously operated accurately on watchOS 4. As Dr. Jafari himself conceded in deposition [REDACTED]

[REDACTED] Ex. 53 (Jafari Dep. II) 87:10–14. But Dr. Jafari performed no such [REDACTED]

[REDACTED] and admitted that the 2023 experiment AliveCor conducted using only two data samples was [REDACTED]

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1 [REDACTED] Ex. 53 (Jafari Dep.
 2 II) 84:13–17; *see also See Chen-Oster v. Goldman, Sachs & Co.*, 325 F.R.D. 55, 69 (S.D.N.Y. 2018)
 3 (excluding statistical studies because “sample size of only 2 pairs . . . could not be statistically
 4 significant”). Having failed to establish any baseline for how SmartRhythm 2.0 *properly* functioned
 5 on watchOS 4, Dr. Jafari cannot offer a scientifically reliable opinion that its performance degraded on
 6 watchOS 5.

7 Separately, the mixed results of only two data samples are not sufficient to demonstrate that
 8 SmartRhythm 2.0’s functionality was degraded on watchOS 5. “No reliable conclusion about causation
 9 or correlation can be drawn from such a small sample.” *Rearden LLC v. Walt Disney Co.*, No. 17-cv-
 10 04006-JST, 2021 WL 6882227, at *6 (N.D. Cal. Jul 12, 2021). Courts routinely recognize that it is
 11 inappropriate to draw broad conclusions or opinions on the basis of only a handful of data points. *See*
 12 *id.*; *Grodzitsky*, 957 F.3d at 985–87 (noting that an expert’s report was methodologically flawed and
 13 unreliable because the expert utilized too small of a sample to form their opinion); *In re Wells Fargo*
 14 *& Co. Shareholder Derivative Litig.*, 445 F. Supp. 3d 508, 529–30 (N.D. Cal. 2020) (finding that four
 15 examples of billing rates was not sufficient to establish a market rate for contract attorneys because “it
 16 is not possible to draw meaningful conclusions from such a small sample size.”).⁵

17 At deposition, Dr. Jafari attempted to justify his reliance on this scant evidence, testifying that
 18 [REDACTED] *See* Ex. 53 (Jafari Dep.
 19 II) 84:8–19. Dr. Jafari’s argument is that a single data point can demonstrate something is broken.
 20 This *might* be correct if Dr. Jafari’s conclusion were limited to an assertion that SmartRhythm 2.0
 21 running on watchOS 5 is unable to detect atrial fibrillation 100% of the time, or that it does not work
 22 with this one particular data sample. But this is not the conclusion that Dr. Jafari intends to offer to the

23 _____
 24 ⁵ Some courts have held that methodological flaws related to sample size “do not preclude []
 25 admission, but go to the [evidence’s] weight.” *See e.g. In re ConAgra Foods, Inc.*, 90 F. Supp. 3d
 26 919, 951 (C.D. Cal. 2015). But as the Advisory Committee on Evidence Rules recently confirmed,
 27 this is not a correct application of Rule 702. Fed. R. Evid. 702, advisory committee notes, 28
 28 U.S.C.A. (West 2023) (“[M]any courts have held that the critical questions of the sufficiency of an
 expert’s basis, and the application of expert’s methodology, are questions of weight and not
 admissibility. These rulings are an incorrect application of Rule[] 702.”). This is precisely why the
 Advisory Committee recently passed an amendment to Rule 702 clarifying that expert testimony may
 not be admitted unless Rule 702’s reliability-based requirements are satisfied by a “preponderance of
 the evidence.” *Id.*

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jury. Rather, he wants to broadly tell the jury that SmartRhythm 2.0 is unable to detect atrial fibrillation with *nearly the same degree of accuracy* on watchOS 5 as on earlier versions of watchOS. A comparison-based opinion such as this necessarily requires Dr. Jafari to demonstrate first, some statistically significant change occurred between the operation of SmartRhythm 2.0 on watchOS 5 as compared to watchOS 4 or earlier versions. Ex. 2 (Stultz Rebuttal) ¶ 134 (“[T]he metric of success is whether SmartRhythm can detect atrial fibrillation in watchOS 5 as well as it did in watchOS 4. To answer this question, one needs to assess whether SmartRhythm produces appropriate alerts with watchOS 5 and how such alerts compare to those generated using watchOS 4.”).

No scientist could reasonably reach that conclusion based on just one or two data samples. *See, e.g.,* Ex. 2 (Stultz Rebuttal) ¶ 65. It is unclear from such minimal data how well or how accurately SmartRhythm 2.0 functioned on either watchOS 4 or watchOS 5, especially when one of the two samples shows superior performance on watchOS 5. *See Rearden*, 2021 WL 6882227, at *6 (excluding expert opinion that relied on an analysis of only four movies). Further, the single data sample that allegedly supports Dr. Jafari’s opinion appears to be an unusual and likely non-representative sample. Specifically, the PPG data from that sample indicates that the patient from whom the data was collected, likely has a rare condition called atrial flutter with 4:1 heart block in addition to atrial fibrillation. Ex. 2 (Stultz Rebuttal) ¶¶ 120–124. Accordingly, detection of an episode of atrial fibrillation in this patient does not involve identifying a change from normal sinus rhythm to atrial fibrillation, but rather identifying a change from one type of arrhythmia (atrial flutter with 4:1 block) to another arrhythmia (atrial fibrillation). *Id.* ¶ 123. How SmartRhythm performs when attempting to detect the onset of atrial fibrillation for this unusual patient, is likely not representative of how it would perform on the more typical SmartRhythm user. Ex. 2 (Stultz Rebuttal) ¶ 124.

At deposition, Dr. Jafari was unwilling to defend the samples as representative of typical AFib patients, instead testifying that [REDACTED] and a technology that’s [REDACTED] Ex. 52 (Jafari Dep. I) 94:22–95:4. As multiple courts have pointed out, that is just wrong because [REDACTED] may produce outlier and non-representative results. *Sparling v. Doyle*, No. EP-13-cv-323-DCG, 2015 WL 4528759 at *26 (W.D. Tex. July 27, 2015) (excluding expert opinion that relied on a small sample of

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1 “outliers [that] did not provide evidence of causation and would not translate to the general
2 population”); *See Brooks v. Morphe LLC*, No. 2:20-cv-01219-KJM-DB, 2022 WL 2052680 at *2 (E.D.
3 Cal. June 7, 2022) (plaintiff’s class size calculations were “questionable” and did not establish
4 numerosity under Rule 23 where she used web traffic data from a single month to estimate class size
5 over the entire class period but did not show that the month selected was “typical or representative”
6 and not an outlier). The unusual nature of this data sample only further illustrates why Dr. Jafari’s
7 broad conclusions on the basis of this single example, are scientifically unsound.

8 To put this differently, imagine if an expert set out to prove that a company’s old gasoline
9 formulation reliably works in all types of vehicles, but a new formulation causes catastrophic damage
10 to all (or even many) vehicles. His purported support for this conclusion is to put the two gasoline
11 formulations into two specific vehicles—a pair of 2023 Ford F-150 pickups fresh off the assembly
12 plant, and a pair of vintage 1973 Porsche 911 S coupes. No information is provided about why these
13 particular vehicles were selected, other than that the party who hired the expert had pre-screened the
14 results obtained with these vehicles as providing the [REDACTED] results. The expert then has
15 both sets of vehicles race through a mountain pass with the following results. As to the Porsches, the
16 sportscar running the new formulation handily defeats the one with the old formulation by six minutes.
17 With the trucks, the Ford pickup with the old formulation completes the race, while the truck with the
18 new formulation does not. No additional information is provided. With these two results in hand, no
19 court should permit the expert to testify to the jury that he has reached a scientific conclusion that the
20 old gasoline formulation is reliable in all vehicles, and the new one causes catastrophic damage in all
21 (or even most) vehicles. Yet that is the equivalent of what Dr. Jafari intends to do here.

2. Cherry-Picked & Non-Representative Results

22 The flaw in relying on such minimal data is even more egregious in this case, where an AliveCor
23 employee, Mr. Valys, previously cherry-picked the two relevant data samples for inclusion in his 2018
24 memorandum *after* seeing how they performed on similar tests. Dr. Jafari then opportunistically chose
25 to have AliveCor employees re-conduct Mr. Valys’s experiment, but only with the two cherry-picked
26 samples.
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1 Dr. Jafari does not pretend that the results produced by the two samples AliveCor chose to re-
2 test for the 2023 experiment were representative of [REDACTED]
3 To the contrary, he unabashedly admits Mr. Valys told him these two samples would provide the [REDACTED]
4 [REDACTED] results to support AliveCor's position in this litigation. Ex. 52 (Jafari Dep. I) 94:6–8. Dr.
5 Jafari also confirmed that in this context, [REDACTED] meant those results that would appear to show
6 the largest effect of [REDACTED]
7 [REDACTED] Ex. 52 (Jafari Dep. I) 95:13–23.

8 “[A] researcher may not focus only on the data that supports the hypothesis and ignore the data
9 that undermines it.” *Rearden*, WL 6882227, at *7 (excluding expert testimony that was based on
10 analysis of a biased sample of animated movies because the expert “selected movies that she believed
11 supported the conclusion she wanted to reach”); see *In re Bextra & Celebrex Mktg. Sales Pracs. &*
12 *Prod. Liab. Litig.*, 524 F. Supp. 2d 1166, 1176, 1184 (N.D. Cal. 2007) (excluding testimony where
13 expert “cherry-pick[ed] observational studies that support his conclusion and reject[ed] or ignor[ed]
14 the great weight of the evidence that contradicts his conclusion”); *In re Countrywide Fin. Corp.*
15 *Mortgage-Backed Secs. Litig.*, 984 F. Supp. 2d 1021, 1039-40 (C.D. Cal. 2013) (rejecting expert
16 testimony that relied on data subject to “various pre-litigation activity, likely including investigation
17 revealing the strength of the evidence”). Dr. Jafari’s reliance on AliveCor’s “biased selection process
18 fails to satisfy *Daubert* and renders h[is] testimony inadmissible.” *Rearden*, 2021 WL 6882227, at *7.

19 And here, it is particularly notable that even after conducting this biased selection process to
20 exclude all but the [REDACTED] samples most favorable to AliveCor, only one of the two samples
21 AliveCor tested returned results that could support Dr. Jafari’s opinion, while the other showed that
22 SmartRhythm actually performed better on watchOS 5 than watchOS 4. Had AliveCor tested [REDACTED]
23 [REDACTED] Mr. Valys tested in 2018, for example, Dr. Jafari may have found that SmartRhythm 2.0
24 performed better on watchOS 5 in nine out of ten cases, a result that would clearly be even more
25 incompatible with his opinion that watchOS 5 significantly degraded the functioning of SmartRhythm

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2.0.⁶ See Ex. 2 (Stultz Rebuttal) ¶ 118 (explaining that the result of the first sample showing SmartRhythm 2.0 alerted faster on watchOS 5 than on watchOS 4 “stands in stark contrast to [Dr. Jafari’s] overall supposition that [watchOS 5] led to a decrease in the performance of SmartRhythm”).

Because Dr. Jafari’s opinion relies primarily on the results of this deeply flawed experiment, his opinion is not supported by a reliable methodology or facts and must be excluded.

B. Dr. Jafari’s Reliance on The Opinions & Testimony of AliveCor Personnel is Unsupported by Any Reliable Methodology

In addition to the 2023 experiment conducted by AliveCor employees, Dr. Jafari relies on several documents reflecting analyses and opinions of AliveCor engineer Mr. Valys and fact testimony from additional AliveCor personnel. While an expert may rely on the opinions and testimony of others in certain circumstances, he must still conduct an independent analysis and reach an opinion based on a reliable methodology. See *Malletier v. Dooney & Bourke, Inc.*, 525 F. Supp. 2d 558, 664 (S.D.N.Y. 2007). Dr. Jafari did neither.

1. Dr. Jafari’s Regurgitation of Mr. Valys’s 2018 Memorandum Is Improper

In effect, Dr. Jafari’s reliance on Mr. Valys’s 2018 memorandum amounts to a bare recitation of Mr. Valys’s opinion. Dr. Jafari cannot and does not confirm the accuracy or reliability of [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This is improper.

While Federal Rule 703 allows an expert to rely on the opinions of others in some circumstances, “the expert witness must in the end be giving his *own* opinion. He cannot simply be a conduit for the opinion of an unproduced expert.” *Malletier*, 525 F. Supp. 2d at 664 (emphasis in original); *PODS Enterprises, Inc. v. U-Haul Int’l, Inc.*, No. 812CV01479T27MAP, 2014 WL 12628662, at *2 (M.D. Fla. July 2, 2014) (expert testimony is inadmissible where the expert “does

⁶ Indeed, given the complexity of the subject matter and the difference among individual conditions, it is likely that even ten samples of MIMIC data would be an insufficient sample size to show a difference in SmartRhythm 2.0’s performance between watchOS 5 and watchOS 4.

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nothing more than parrot [another expert’s] findings and opinions”); *In re Sulfuric Acid Antitrust Litig.*, 235 F.R.D. 646, 653 (N.D. Ill. 2006) (“[O]ne expert could not be the mouthpiece for another.”).

Here, Dr. Jafari did not conduct any analysis to assess the reliability, or lack thereof, of Mr. Valys’s experiment. Dr. Jafari did not review the results [REDACTED] and has no idea what those results showed, Ex. 53 (Jafari Dep II) 96:9–97:15; did not review or analyze the version of SmartRhythm Mr. Valys used for his 2018 tests, Ex. 7 (Jafari Rpt.) ¶ 66; and was not able to replicate Mr. Valys’s results, *id.* ¶ 83. Given Dr. Jafari’s failure to independently corroborate the reliability of the results included in Mr. Valys’s memorandum, by relying on that memorandum he is simply improperly “parrot[ing] [Mr. Valys’s] findings and opinions.” *PODS Enterprises, Inc.*, No. 812CV01479T27MAP, 2014 WL 12628662, at *2 (M.D. Fla. July 2, 2014).

Further, Mr. Valys’s memorandum also cannot stand on its own, as it is unreliable on its face for the same reasons as the 2023 experiment, because it summarizes only the results of two cherry-picked non-representative data samples, from which no scientifically sound conclusions can be extrapolated. *See In re Incretin-Based Therapies Products Liability Litig.*, 524 F. Supp. 3d 1007, 1039 (S.D. Cal. 2021) (excluding expert opinion that “consists of a cherry-picked selection of favorable data” because it was “unduly results-driven, not good science, and therefore inadmissible”); *see also Rearden*, 2021 WL 6882227, at *6.

Moreover, any reliance on Mr. Valys’s memorandum to draw conclusions about the performance of SmartRhythm 2.0 is inappropriate because [REDACTED]
[REDACTED]
[REDACTED] *See* Ex. 7 (Jafari Rpt.) ¶ 83. In conducting reliability analyses, courts must consider whether “there is simply too great an analytical gap between the data and the opinion proffered.” It is inconclusive at best for Dr. Jafari to rely on [REDACTED] that is known to perform differently than SmartRhythm 2.0 in order to opine about the performance of SmartRhythm 2.0. *See General Electric Co. v. Joiner*, 522 U.S. 136, 146, 118 S. Ct. 512, 139 L.Ed.2d 508 (1997) (expert testimony should be excluded where “there is simply too great an analytical gap between the data and the opinion proffered”).

FILED UNDER SEAL**2. Dr. Jafari's Reliance on Other AliveCor Documents & Testimony Follows No Reliable Methodology**

Finally, Dr. Jafari relies on documents and testimony from AliveCor personnel regarding alleged changes to the functioning of SmartRhythm following the release of watchOS 5. Dr. Jafari's reliance on these sources does not comport with any reliable methodology as he does not conduct any independent analysis to verify or corroborate the opinions and statements on which he relies.

Dr. Jafari identifies various documents and testimony indicating that AliveCor personnel observed a decrease in the number of SmartRhythm alerts following the release of watchOS 5, such as a 2019 email from Mr. Valys. *See* Ex. 7 (Jafari Rpt.) ¶¶ 70–73. Even assuming that these documents and testimony demonstrate a decrease in SmartRhythm's performance (which Apple disagrees with but will be assumed for this motion), they cannot form the basis of Dr. Jafari's opinion here. Dr. Jafari does not conduct any independent analysis to either confirm that a drop in SmartRhythm alerts actually occurred nor to determine if any such drop was statistically significant, or explainable by factors other than a decrease in the performance of SmartRhythm. "[A] decrease in alerts does not necessarily mean that SmartRhythm performance was degraded by the OS change." Ex. 2 (Stultz Rebuttal) ¶ 90. For example, a disparity in alerts between users running watchOS 4 and watchOS 5 could be explained by differences in the actual rates of atrial fibrillation between the groups. *Id.* In deposition Mr. Valys confirmed that in preparing his 2019 email, he did not attempt to correct for or test a possible imbalance in the underlying prevalence of AFib among watchOS 4 and watchOS 5 users or attempt to quantify the likelihood that the alleged drop in alerts he reportedly observed was the result of random chance. *See* Ex. 45 (Valys Dep.) 280:2–283:25; Ex. 2 (Stultz Rebuttal) ¶ 91. Dr. Jafari conducts no analysis himself regarding the alleged drop in SmartRhythm alerts following the release of watchOS 5 that would reliably support his ultimate opinion that watchOS 5 degraded the functionality of SmartRhythm. *See PODS Enterprises, Inc. v. U-Haul Int'l, Inc.*, No. 812CV01479T27MAP, 2014 WL 12628662, at *2 (M.D. Fla. July 2, 2014) (an expert's testimony is inadmissible where the expert "does nothing more than parrot [another individual's] findings and opinions").

Dr. Jafari also purportedly relies on Mr. Valys's testimony regarding an alleged change in the [REDACTED] *see* Ex. 7 (Jafari Rpt.) ¶ 71, but fails to perform any independent analysis regarding this testimony or even explain its purported

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1 relevance to his conclusions. Dr. Jafari does not contend that [REDACTED]
2 [REDACTED] impacted or impeded the functioning of SmartRhythm 2.0. Nor does he offer any
3 analyses corroborating Mr. Valys's claim that there was such a change. While an expert may rely on
4 the opinions and facts of others, "the expert witness must in the end be giving his *own* opinion. He
5 cannot simply be a conduit for the opinion of an unproduced expert." *Malletier*, 525 F. Supp. 2d at
6 664 (S.D.N.Y. 2007) (emphasis in original).

7 Dr. Jafari does not conduct any independent analysis with regard to the AliveCor documents
8 and testimony he cites, and accordingly his reliance on those documents is not scientifically sound.

V. CONCLUSION

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10 The Court should exclude Dr. Roozbeh Jafari's opinion that watchOS 5 degraded the
11 functionality of SmartRhythm.

12
13 DATED: July 27, 2023

GIBSON, DUNN & CRUTCHER LLP

14 By: /s/ Caeli A. Higney
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